

**In the Claims:**

1. (Currently Amended): Method for fractionating a cooking oil, ~~in particular frying oil,~~ using a solvent at supercritical pressure, characterized in that it comprises the steps consisting of ~~in~~:
  - contacting, in a mixer, the cooking oil with the solvent at supercritical pressure;
  - separating the resulting mixture into two phases in a decanter, namely a light phase and heavy phase;
  - decompressing the light phase and the heavy phase so as to recuperate the solvent and the treated oil and the treatment residues respectively.
2. (Currently Amended): Method according to Claim 1, characterized in that the solvent ~~fluid~~ at supercritical pressure is constituted by carbon dioxide.
3. (Currently Amended): Method according to Claim 2, characterized in that the solvent ~~fluid~~ at supercritical pressure is constituted by mixture of an organic solvent in carbon dioxide ~~dioxide~~ at a pressure included between 7.4 MPa and 50 Mpa, ~~and more favourably between 20 MPa and 40 MPa~~ and at a temperature included between 0°C and 80°C.
4. (Currently Amended): Method according to Claim 3, characterized in that the organic solvent is a light hydrocarbon having between 2 and 5 carbon atoms, such as ethane, propane and butane.
5. (Currently Amended): Method according to Claim 3, characterized in that the organic solvent is an alcohol, ~~and more favourably ethanol~~.
6. (Currently Amended): Method according to Claim 3, characterized in that the organic solvent is a ketone, ~~and more favourably acetone~~.
7. (Currently Amended): Method according to Claim 3, characterized in that the organic solvent is an ester, ~~and more favourably ethyl acetate~~.

8. (Original): Method according to any one of the preceding Claims, characterized in that the heavy phase is recycled in part with the initial feedstock constituted by the cooking oil to be treated.
9. (New): Method according to Claim 1, wherein the cooking oil is a frying oil.
10. (New): Method according to Claim 3, wherein the pressure is between 20 MPa and 40 MPa.
11. (New): Method according to Claim 5, wherein the alcohol is ethanol.
12. (New): Method according to Claim 6, wherein the ketone is acetone.
13. (New): Method according to Claim 7, wherein the ester is ethyl acetate.